

Applicant : Jaap Herman Van't Hoff
Serial No. : 10/657,250
Filed : September 9, 2003
Page : 9 of 15

Attorney's Docket No.: 17042-004001

REMARKS

In response to the Office Action of October 22, 2007, Applicant amended claims 11, 13, and 28, and cancelled claim 27. Claims 11, 13, 14, 17-25, and 28 are present for examination.

The Examiner objected to an amendment to the specification filed on July 26, 2007 as introducing new matter into the disclosure in violation of 35 U.S.C. § 132(a). Applicant does not concede that the portion of the amendment to the specification pointed to by the Examiner was new matter. Nonetheless, Applicant amended the specification to remove a sentence that included the objected to portion. Applicant therefore requests reconsideration and withdrawal of this objection.

The Examiner rejected claim 27 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicant does not concede that the limitation pointed to by the Examiner in previously pending claim 27 was new matter. Nonetheless, Applicant cancelled claim 27.

The Examiner rejected claims 13 and 18 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended claim 13 to recite first and second extreme positions rather than upper and lower extreme positions. Applicant has amended claim 28 to remove the limitation regarding "the opening" and to recite "a fluid connection being defined between a first chamber and an inner space of a fluid dispensing container by means of at least the first opening and the space". Applicant therefore requests reconsideration and withdrawal of these rejections.

Applicant also amended claims 11 and 28 for clarity and to correct minor errors. No new matter has been added.

The Examiner rejected claims 11, 13, 14, 17-21, 25, 27 and 28 under 35 U.S.C. § 103(a) as being unpatentable over Cruysberghs, U.S. Patent No. 5,368,207 ("Cruysberghs"), i.e., the embodiment of Figures 8-9 in view of the embodiment of Figure 3, further in view of Alfons, U.S. Patent No. 5,285,931 ("Alfons").

Applicant : Jaap Herman Van't Hoff
Serial No. : 10/657,250
Filed : September 9, 2003
Page : 10 of 15

Attorney's Docket No.: 17042-004001

The independent claims 11 and 28 both recite that a closing member comprises a plunger and that a "second subsurface forms a cavity in the plunger of the closing member."

Independent claim 11 recites a valve with a closing member. A circumferential recess is in the valve. Independent claim 28 recites a "stem being provided with a circumferential recess..."

The Examiner acknowledged that the embodiment of Figures 8 and 9 of Cruysberghs does not disclose the claimed circumferential recess or a second subsurface that forms a cavity in the plunger of the closing member, as recited by these claims.¹

The Examiner made the following argument:²

Firstly, the patent to Alfons discloses that it is known in the art to employ a "circumferential recess" at recess 17 surrounding the valve rod 10 for the purpose of providing the largest cross sectional area for flow through the valve thus avoiding the hindrance to flow an otherwise smaller cross sectional area would present.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in the embodiment of figures 8 and 9³ of Cruysberghs a "circumferential recess" at groove 144b for the purpose of providing the largest cross sectional area for flow through the valve thus avoiding the hindrance to flow the otherwise smaller cross sectional area of groove 144b would present as recognized by Alfons.

Cruysberghs describes a piston rod 144 attached to a plunger 146 and a notch, or groove 144b formed in the rod 144. Cruysberghs, col. 9, lines 34-39; Fig. 8. Cruysberghs, however, includes no disclosure that the notch 144b in any way inadequately performs the task of permitting the high pressure gas in the chamber 140 to pass through the opening 136a or that the notch 144b in any way presents a hindrance to flow, as argued by the Examiner. Cruysberghs, col., 10, lines 32-38; Fig. 8. Alfons likewise does not proclaim the benefits of providing the largest cross sectional area for flow or describe using a peripheral groove to avoid a hindrance to flow. Thus, one of skill in the art would have had no reason to add a circumferential recess to

¹ Office Action, October 22, 2007 at p. 6 (claims 11 et al.) and 10 (claim 28).

² Office Action, October 22, 2007 at p. 7 (claims 11 et al.) and 10 (claim 28).

³ Here, Applicant assumes that the Examiner intended to refer to Figure 8 and 9 of Cruysberghs.

Applicant : Jaap Herman Van't Hoff
Serial No. : 10/657,250
Filed : September 9, 2003
Page : 11 of 15

Attorney's Docket No.: 17042-004001

Cruysberghs, and would have had no reason to look to Alfons as a basis for adding a circumferential recess.

Rather than disclosing a piston, Alfons describes using a membrane 9 that bears a rod 10 having a peripheral groove 17. Alfons, col. 3, lines 13-39. The rod 10 will be better retained if the rod 10 is in a position aligned with a central axis of the opening in the wall 67, which the peripheral groove 17 permits.

Similarly, in the embodiment of Cruysberghs shown in Figures 8 and 9 of Cruysberghs, the valve rod 144 having the notch 144b is also needed to keep the plunger 146 in an orientation perpendicular to the central axis of the cylindrical vessel 136.

Even if one of ordinary skill was to try to combine Cruysberghs with Alfons, it is conceivable that the combination would not work properly. In Cruysberghs, the O-ring 142 surrounding the rod 144 "seals against the egress of the pressurized gas contained in the chamber 140." Cruysberghs, col. 10, line 10-12. The rod 144 of Cruysberghs is sized to create such a interference fit between the O-ring 142 and the rod 144. In addition, because the notch 144b does not extend circumferentially around the rod 144, the tight interference fit between the rod 144 and the O-ring 142 ensures that the rod 144 remains aligned with the longitudinal axis of the cylindrical vessel 136, even when the notch 144b is positioned adjacent to the O-ring 142.

However, if the peripheral groove 17 of Alfons were introduced into Cruysberghs' rod 144 to replace the notch 144b to form a circumferential groove in the rod 144, there would no longer be an interference fit between the rod 144 and the O-ring 142 when the circumferential groove was positioned in the opening 138a (the opening 138 a is provided through the partition 138 disposed coaxially with the cylindrical vessel 136 of Fig. 8). Therefore, the plunger 146 would not be prevented from tilting with respect to the longitudinal axis of the cylindrical vessel 136. Instead, there is a substantial risk that the plunger 146 could become misaligned when the circumferential groove is in contact with the O-ring 142. It is possible that the orientation of the plunger 146 with respect to central axis of the cylindrical vessel 136 could change from a perpendicular orientation so that, for example, the plunger could be impeded from moving upwardly or downwardly, or the O-ring 142 could be damaged as a result of the edges of the

Applicant : Jaap Herman Van't Hoff
Serial No. : 10/657,250
Filed : September 9, 2003
Page : 12 of 15

Attorney's Docket No.: 17042-004001

circumferential groove in the rod 144 rubbing against the O-ring 142. Thus, it is conceivable that significant complications would arise from combining Cruysberghs and Alfons. The complications could impair the functioning of Cruysberghs' pressure generator 134 of Figs. 8 and 9 to the extent that the combination of Cruysberghs and Alfons would not even be possible. Thus, for these additional reasons, one of skill in the art would have had no reason to add a circumferential recess to Cruysberghs, and would have had no reason to look to Alfons as a basis for adding a circumferential recess. Even if a circumferential recess was added to Cruysberghs, or if Cruysberghs and Alfons were combined, the result may not even be workable.

Therefore, neither Cruysberghs, alone or in combination with Alfons, discloses or renders obvious a circumferential recess, as required by independent claims 11 and 28, and there is no reason to combine these references to provide the subject matter of these claims.

Again, the Examiner acknowledged that the embodiment of Figures 8 and 9 of Cruysberghs does not disclose the second subsurface that forms a cavity in the plunger of the closing member, as recited by independent claims 11 and 18.⁴

The Examiner made the following argument:⁵

Secondly, the embodiment of fluid piston at figure 3 of Cruysberghs discloses that it is known in the art to employ a piston element, responsive to fluid pressure thus acting as an actuator from one side and acting as a valve on the opposite side, which actuator side of the piston includes a "cavity" at 50 for the purpose of providing a larger volume for the "second" gas pressure chamber which, relative to the smaller volume chamber at 150 of Cruysberghs, would allow for limited fluid pressure leakage across the seal of the plunger maintaining a constant pressure value in the pressure chamber.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in the embodiment of figures 8 and 9 of Cruysberghs, a "cavity" in the plunger 146, on the pressure chamber 150 side of the plunger 146 for the purpose of providing a larger volume for the "second" gas pressure chamber 150 which, relative to the smaller volume chamber at 150 of Cruysberghs, would allow for limited fluid pressure leakage across the seal 148 of the plunger 146 of Cruysberghs while maintaining a constant pressure value in the

⁴ Office Action, October 22, 2007 at p. 6 (claims 11 et al.) and 10 (claim 28).

⁵ Office Action, October 22, 2007 at p. 7 (claims 11 et al.) and 10-11 (claim 28).

Applicant : Jaap Herman Van't Hoff
Serial No. : 10/657,250
Filed : September 9, 2003
Page : 13 of 15

Attorney's Docket No.: 17042-004001

pressure chamber 150 as recognized in the embodiment of piston element of figure 3 of Cruysberghs.

Cruysberghs discloses in Figure 3 an alternative piston 40' for use in a pressure generator 30 of Figures 1, 2a and 2B, a separate embodiment from that shown in Figures 8 and 9.

Cruysberghs, col. 5, lines 43-55. As shown in Figure 3 of Cruysberghs, upper and lower wells 50 and 52 are provided in the upper and lower ends of the piston 40', respectively. Cruysberghs, col. 5, line 48-51. The wells 50 and 52 are provided for receiving a tool, such as a spheric pen, to axially position the piston 40' during charging of the chambers 38 and 46. Cruysberghs, col. 5, line 48-53.

The Examiner argues that it would have been obvious to one of skill in the art to have employed a "cavity" in the plunger 146 of Cruysberghs in order to provide a larger volume for the chamber 150 to allow for limited fluid pressure leakage across the seal 148 of the plunger 146. However, neither the description of Figure 3 nor the description of Figures 8 and 9 mention volumetric considerations. For Figure 3, Cruysberghs only describes providing the upper well 50 for receiving a tool to axially position the piston 40'. For the embodiment of Figures 8 and 9, Cruysberghs includes no disclosure that the volume of the chamber 150, by itself or in relationship to the chamber 152, is in any way inadequate, nor does Cruysberghs associate the volume of the chamber 150 with concerns regarding "fluid pressure leakage". Thus, Applicant respectfully submits that the reason provided by the Examiner is merely speculative hindsight reasoning that finds no basis in Cruysberghs disclosure.

Therefore, neither Figures 8 and 9 of Cruysberghs, alone or in combination with Figure 3 of Cruysberghs, discloses or render obvious a second subsurface that forms a cavity in the plunger of the closing member, as required by independent claims 11 and 28, and there is no reason to combine these disclosures of Cruysberghs to provide the subject matter of these claims.

In view of at least the foregoing reasons, Applicant respectfully submits that claims 11, 13, 14, 17-21, 25, 27 and 28 are not unpatentable over Cruysberghs, i.e., the embodiment of Figures 8-9 in view of the embodiment of Figure 3, further in view of Alfons. Applicant therefore requests reconsideration and withdrawal of this rejection.

Applicant : Jaap Herman Van't Hoff
Serial No. : 10/657,250
Filed : September 9, 2003
Page : 14 of 15

Attorney's Docket No.: 17042-004001

The Examiner rejected claims 18 and 22-24 on the ground of nonstatutory obviousness-type double patenting as being allegedly unpatentable over claims 1-10 of van't Hoff, U.S. Patent No. 6,616,017 ("van't Hoff"). Applicant does not concede that the subject matter of claims 18 and 22-24 is covered by claims 1-10 of van't Hoff. Nonetheless, to expedite prosecution, Applicant has concurrently submitted a replacement terminal disclaimer in compliance with 37 C.F.R. §§ 3.73(b) and 1.321(b).⁶ A previous terminal disclaimer submitted by Applicant was not accepted by the Examiner. The replacement terminal disclaimer has been signed by an attorney of record in the application. Therefore, Applicant respectfully requests that the Examiner accept the new terminal disclaimer and that the Examiner withdraw the rejection of claims 18 and 22-24.

For at least the foregoing reasons, independent claims 11 and 28 are believed to be allowable.

Each of the dependent claims 13, 14, and 17-25 is also believed to define patentable features of the inventions. Each dependent claim partakes of the novelty of its corresponding independent claim, claim 11, and for at least this reason, these claims are believed to be allowable.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

⁶ As noted by the Examiner in the October 22, 2007 Office Action at p. 14, Applicant is not required to pay another disclaimer fee for this replacement terminal disclaimer. See Form Paragraph 14.35 in M.P.E.P. § 1490 (VII) at pp. 1400-113-14.

Applicant : Jaap Herman Van't Hoff
Serial No. : 10/657,250
Filed : September 9, 2003
Page : 15 of 15

Attorney's Docket No.: 17042-004001

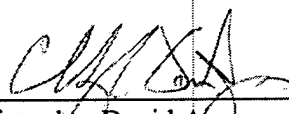
In view of the foregoing amendments and remarks, Applicant respectfully submits that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney can be reached at the address shown below. All telephone calls should be directed to the undersigned at (617) 956-5938.

Please apply any charges or credits to Deposit Account No. 06-1050, referencing attorney docket no. 17042-004001.

Respectfully submitted,

Date: 2/11/08



Christopher David Agnew
Reg. No. 43,464

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110
Telephone: (617) 542-5070
Facsimile: (617) 542-8906